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IS 11618 (1986): Non-regulating Type Liquid Flow Indicators [PGD 19: Lubricating Equipments]

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IS : 11618 - 1986

Indian Standard

(Reaffirmed 2001)

SPECIFICATION FOR NON-REGULATING TYPE LIQUID FLOW INDICATORS

1. Scope — Lays down the requirements of liquid flow indicators of non-regulating type having taper pipe threads with one or both side windows covered with glass for use in industrial plants. These are installed in pipe lines to indicate the flow of liquid.

1.1 This standard prescribes only the flapper type as the indicating component is a flapper.

2. Dimensions — As given in Table 1.

3. Material

3.1 The body of the liquid flow indicators shall be either from bronze castings conforming to Grade 2 of IS:318-1981 'Specification for leaded tin bronze ingots and castings (*second revision*)' or cast iron conforming to grade FG 200 of IS:210-1978 'Specification for grey iron castings (*third revision*)'.

3.2 The ring shall be made from a solid round brass bar stock conforming to Type I of IS:319-1974 'Specification for free cutting brass bars, rods and sections (*third revision*)' or from similar bar of mild steel conforming to IS:226-1975 'Structural steel (standard quality) (*fifth revision*)'.

3.3 The flapper shall be made from bronze castings conforming to Grade II of IS:318-1981 or from brass sheet conforming to IS:410-1977 'Specification for cold rolled brass sheet, strip and foil (*third revision*)' or plastics, aluminium or tinplate conforming to IS:1993-1974 'Specification for cold-reduced tinplate and cold-reduced blackplate (*second revision*)'.

3.4 The spring shall be made from stainless steel wire conforming to IS:6528-1972 'Specification for stainless steel wire' or phosphor bronze wire conforming to grade HD of IS:7608-1975 'Specification for phosphor bronze wires (for general engineering purpose)'. Spring steel conforming to IS:4454 (Part 1)-1981 'Specification for steel wires for cold formed, springs:Part 1 Patented and cold drawn steel wires—unalloyed (*second revision*)', when used with oil.

3.5 The gasket shall be punched out in suitable size from compressed asbestos fiber conforming to IS:2712-1979 'Specification for compressed asbestos fiber jointings or rubber sheet conforming to IS:638-1979 'Specification for sheet rubber jointings and rubber insertion jointings' depending upon the type of liquid flowing in the indicator.

3.6 The pin shall be machined from brass rod conforming to IS:319-1974 or stainless steel.

3.7 The windows of the non-regulating type liquid flow indicators shall be covered with transparent toughened glass conforming to IS:2553-1971 'Specification for safety glass'.

4. Designation

4.1 The non-regulating type liquid flow indicator shall be designated by:

a) Non-regulating type liquid flow indicator (NR); and

b) Nominal size.

Example — NR 10 IS:11618.

Lubricating Equipment Sectional Committee, EDC 63 [Ref : Doc : EDC 63 (3752)]

Adopted 4 March 1986

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Gr 2

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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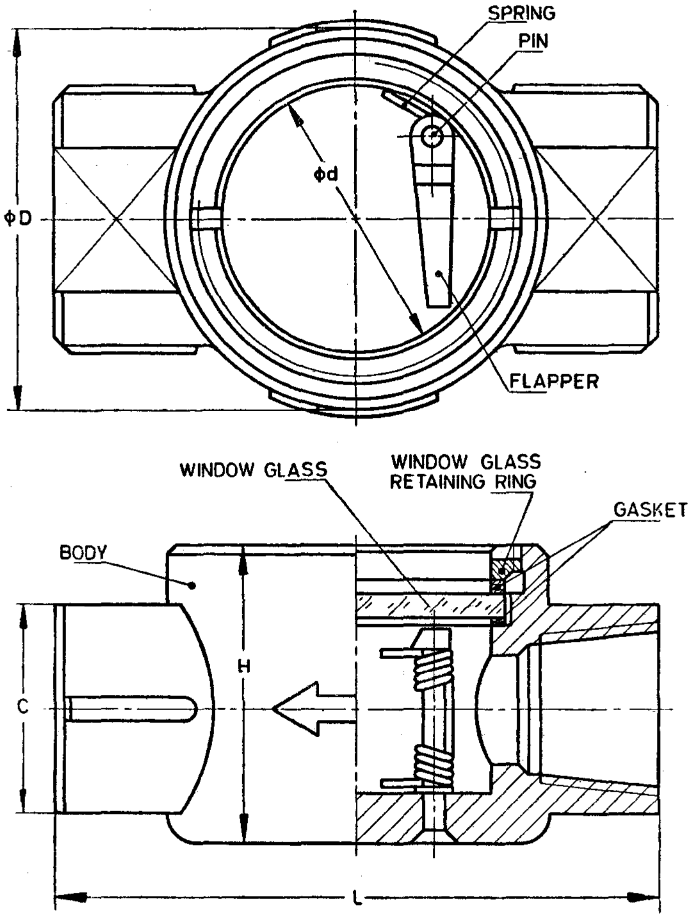
TABLE 1 DIMENSIONS OF NON-REGULATING LIQUID FLOW INDICATORS

(*Clause* 2)

All dimensions in millimetres.



$d \geqslant D/2$

Nominal Bore Size	Taper* Threads	*L* ±0·3	*D* Approx	*H* *Max*	*C* *Min*
10	⅜″	90	60	60	27
15	½″	90	60	60	27
20	¾″	120	75	65	41
25	1″	120	75	65	41
32	1¼″	120	75	75	60
40	1½″	150	100	85	60
50	2″	150	105	95	75
65	2½″	200	120	120	90
80	3″	220	120	155	110
100	4″	230	130	180	125

Note — Liquid flow indicators of size 50 and above can be manufactured with flange connections conforming to IS:6418-1971 'Specification for cast iron and malleable cast iron flanges for general engineering purposes', as agreed to between the purchaser and the manufacturer.

*Conforming to IS:554-1985 'Dimensions for pipe threads where pressure tight joints are required on threads (*third revision*)'.

5. Workmanship and Finish

5.1 The non-regulating type liquid flow indicators shall be finished smooth and shall be free from cracks, burrs and other manufacturing defects.

5.2 Outer surface of cast iron bodies shall be painted with a suitable oil resistant anti-corrosion paint.

6. Sampling

6.1 Unless otherwise agreed to between the purchaser and the supplier, the sampling plan as given in Appendix A shall be followed.

7. Tests

7.1 Unless otherwise agreed to between the purchaser and the supplier every flow indicator complete with its components shall be tested under an internal hydraulic pressure of $1\frac{1}{2}$ time the maximum working pressure at least for two minutes during which it shall neither leak nor sweat.

7.2 *Functional Test* — The flapper of the non-regulating type liquid flow indicator shall start functioning at 0·05 MPa pressure.

8. Marking

8.1 The non-regulating type liquid flow indicators shall be legibly and indelibly marked with the manufacturer's name or trade-mark. The designation shall be marked for easy identification. Direction of flow shall also be impregnated on the body.

8.2 *ISI Certification Marking* — Details available with the Indian Standards Institution.

9. Packing

9.1 The liquid flow indicators shall be packed in accordance with the best prevalent trade practices as specified by the purchaser.

APPENDIX A

(*Clause* 6.1)

SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

A-1. Scale of Sampling

A-1.1 *Lot* — In any consignment all the flow indicators manufactured from the same material under essentially similar conditions of production shall be grouped together to constitute a lot.

A-1.2 For ascertaining the conformity of the lot to the requirements of the specification, tests shall be carried out for each lot separately. The number of flow indicators to be selected at random for this purpose shall be as given below.

To ensure the randomness of selection IS:4905-1968 'Method for random sampling' shall be followed:

Lot Size (1)	*Sample Size* (2)	*Permissible Number of Defectives* (3)
Up to 100	8	0
101 to 150	13	0
151 to 300	20	0
301 to 500	32	1
501 to 1 000	50	2
1 001 to 3 000	80	3
3 001 and above	125	5

A-2. Number of Tests and Criteria for Conformity

A-2.1 The flow indicators selecting to **A-1.2** shall be examined for dimensions, hydraulic test and workmanship and finish. Any flow indicator failing to satisfy the requirements for any one or more, of the characteristics shall be declared defective.

A-2.2 The lot shall be declared conforming to the requirements of this specification if the number of flow indicators found defective in less than or equal to the corresponding number given in **A-1.2**.

EXPLANATORY NOTE

This standard covers the requirements of liquid flow indicators and is based on the manufacturing practices followed in the country.

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